

Claims

- [c1] 1. An apparatus for retrofitting a section of drill pipe with a transmission line, the apparatus comprising:
an insert for insertion into at least one of the box end and the pin end of a section of drill pipe, wherein the insert comprises a mount portion and a slide portion;
a transmission element mounted in the slide portion;
and
a biasing element for effecting a bias between the mount portion and the slide portion.
- [c2] 2. The apparatus of claim 1, wherein the insert is inserted into the inside diameter of a section of drill pipe.
- [c3] 3. The apparatus of claim 1, further comprising a channel traveling through at least one of the slide portion and the mount portion to accommodate a transmission line.
- [c4] 4. The apparatus of claim 3, further comprising a transmission line routed through the channel, wherein the transmission line is configured to flex when the slide portion slides with respect to the mount portion.
- [c5] 5. The apparatus of claim 1, wherein the biasing element is selected from the group consisting of an elastomeric

material, a spring, compressed gas, or a combination thereof.

- [c6] 6. The apparatus of claim 1, wherein:
the slide portion is substantially cylindrical in shape; and
the slide portion is characterized by an annular mating surface configured to contact a corresponding annular mating surface.
- [c7] 7. The apparatus of claim 6, wherein:
the transmission element is substantially annular; and
the transmission element is mounted in the annular mating surface.
- [c8] 8. The apparatus of claim 1, further comprising a stop mechanism adapted to prevent the slide portion from sliding more than a specified distance with respect to the mount portion.
- [c9] 9. An apparatus for retrofitting a section of drill pipe with a transmission line, the apparatus comprising:
a pin end insert comprising a first transmission element, wherein the pin end insert is insertable into the pin end of a section of drill pipe; and
a box end insert comprising a second transmission element, wherein the box end insert is insertable into the box end of a section of drill pipe.

- [c10] 10. The apparatus of claim 9, wherein at least one of the pin end insert and the box end insert further comprises a mount portion and a slide portion.
- [c11] 11. The apparatus of claim 10, further comprising a biasing element for effecting a bias between the mount portion and the slide portion.
- [c12] 12. The apparatus of claim 11, wherein at least one of the first and second transmission elements is mounted to the slide portion.
- [c13] 13. The apparatus of claim 10, further comprising a channel traveling through at least one of the slide portion and the mount portion to accommodate a transmission line.
- [c14] 14. The apparatus of claim 13, further comprising a transmission line routed through the channel, wherein the transmission line is configured to flex when the slide portion slides with respect to the mount portion.
- [c15] 15. An apparatus for retrofitting a section of drill pipe with a transmission line, the apparatus comprising:
an insert for insertion into at least one of the box end and the pin end of a section of drill pipe; and
a transmission element mounted in the insert.

- [c16] 16. The apparatus of claim 15, wherein the insert further comprises a mount portion and a slide portion.
- [c17] 17. The apparatus of claim 16, further comprising a biasing element for effecting a bias between the mount portion and the slide portion.
- [c18] 18. An apparatus for retrofitting a section of drill pipe with a transmission line, the apparatus comprising:
an insert for insertion into at least one of the box end and the pin end of a section of drill pipe;
a transmission element mounted in the insert;
a biasing element for effecting a bias between the insert and the at least one of the box end and the pin end.
- [c19] 19. The apparatus of claim 18, wherein the insert further comprises a mount portion and a slide portion.
- [c20] 20. The apparatus of claim 19, wherein the biasing element is adapted to effect a bias between the mount portion and the slide portion.